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the pulse of global agriculture

The Real Hero

Hero MotoCorp

Bundling Seeds, Weather Forecasts and Insurance

With close to half a billion people living in smallholder households in India, any event that disrupts farming can undermine the food security of the entire nation. This has been clearly demonstrated by the Covid pandemic, where lockdowns that prevented harvesting resulted in crops being sold at rock-bottom prices or going to waste.

With the pandemic delivering ongoing uncertainty, and climate change bringing ever more floods and droughts, it is imperative we take action to ensure small-scale food producers can quickly overcome challenging events. Providing a package of support measures – encompassing up-to-date meteorological information, seeds suited to local weather, soil and climatic conditions, and insurance against adverse weather events – is one way to achieve this.

For the past two years, WRMS has worked with the International Water Management Institute (IWMI) and the Indian Council of Agricultural Research to investigate ways to combine seed systems and climate information with index-based floods or drought insurance to reduce farmers' risk from extreme weather. In the project Bundled Solutions of Index Insurance with Climate Information (BICSA), supported by the CGIAR Research Programs on Climate Change, Agriculture and Food Security and Water, Land and Ecosystems, we sought to first reduce risk from climate events, and then to use insurance to transfer the remaining risk.

To reduce risk, we supplied farmers with climate-appropriate seeds, along with regular weather updates via SMS messages. This meant, for example, that when a particularly wet monsoon was forecast, the farmers could use moisture-tolerant seeds. Sowing these rather than their usual variety would enable them to sustain their crops through minor or moderate floods. However, we also provided insurance so that farmers could be compensated in the case of a major flood completely destroying their crops.

IWMI developed the insurance product with the aim of wide-scale adoption to mitigate climate risk. Scientists at the Institute used historic climate records and data on vulnerability to develop indices of risk for floods and droughts. When an extreme event takes place, they consult contemporary satellite images to identify remotely how agricultural land has been affected. The technology enables them to determine the depth and duration of a flood, or the extent and severity of a drought. This means that insured farmers' claims for compensation can be rapidly verified and paid, enabling smallholders to recover and get back to farming quickly.

Testing the product

We conducted several pilot projects to test our approach, each time bundling seeds, SMS-based

Helping Farmers Overcome Extreme Weather Events

ANUJ KUMBHAT
Director and Founder of Weather Risk Management Services (WRMS) Pvt. Ltd.

weather forecasts, insurance, and advice on locally appropriate water-management methods and fertilizers. In 2018, 170 of 400 farmers who participated in our trial scheme in Bihar, India, received compensation to the value of INR 353,000 (around USD $5,000), and 63 farmers received a share of 50kg of seeds. We conducted larger pilot projects the following year in both Bihar and Bangladesh.

In 2019, the monsoon was particularly destructive. For example, there were unprecedented floods in Muzaffarpur, one of the districts covered by the BICSA scheme in Bihar. We noted that, while some farmers completely lost their crops to flooding, others who had planted the flood-resistant seeds achieved a normal yield. Often it can be difficult to persuade farmers to participate on a long-term basis in insurance schemes; however, increasing the whole value system for agriculture, such as through the BICSA scheme, means they can still potentially benefit even in years when they do not receive a payout.

Working with IWMI has helped us to develop this value-chain approach. We plan to incorporate approaches and lessons learned from BICSA to scale up our work to encompass 25,000 farmers in India in the next 12 months. We will do so by offering our SecuFarm Yield Assurance solution, aimed at helping farmers reduce their risk, and enhance the yield and value of their outputs. Secufarm encompasses risk transfer so that farmers receive compensation if they suffer yield losses due to adverse growing conditions.

We have identified seven or eight clusters of farmers growing eight to ten crops, and we are developing packages of solutions for those particular crops. And, in addition to floods and droughts, we are looking into covering farmers for pest infestations too, which can also be detected using satellite data. We are reaching out to the Indian government in the hope that it may be possible to offer the package through the Farmer Producer Organization network. And once we have trialled this in India, we will seek to widen it to other countries too. We hope to have continued support from IWMI as we embark on our journey to extend the approach taken with BICSA through the SecuFarm Yield Assurance solution.

Until now, insurance companies been unwilling to provide insurance at individual farm scale because they have not had the means to easily calculate damage to crops at such a high resolution. However, using an index-based product based on the latest high-resolution satellite data is enabling us to fill that gap. By reducing the risk to farmers through seeds matched to anticipated weather conditions and enhanced agricultural practices, we are confident that many more farmers can be cushioned from unexpected shocks, contributing to wider food security.